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From: "Enos, Robert" < renos@DonlinGold.com>

To: Don.P.Kuhle@usace.army.mil

"Brelsford, Taylor" <taylor.brelsford@urs.com>

Date: 2/6/2013 10:39:42 AM

Subject: Donlin Presentation for Agency Scoping Meeting
Attachments: Donlin Agency Scoping Meeting 130206.pdf

Don and Taylor,

Attached is a copy of Donlin Gold's presentation for today's Agency Scoping meeting so that those calling in may follow along. I also plan on bringing 60 hard-copies for the Cooperating Agency participants.

Best Regards, Nick

Robert (Nick) Enos

Environmental & Permitting Manager Donlin Gold 4720 Business Park Blvd., Suite G-25 Anchorage, AK 99503

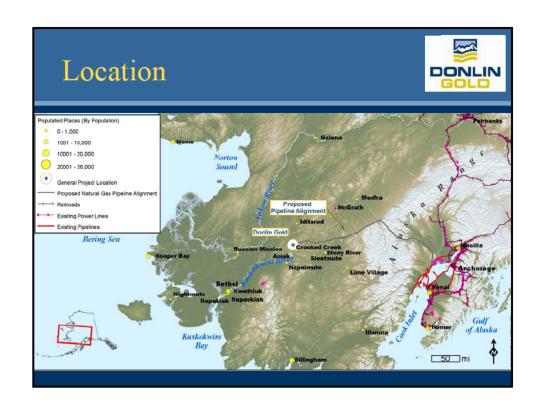
Tel: (907) 273-0200 Mobile: (907) 350-1102 Fax: (907) 273-0201

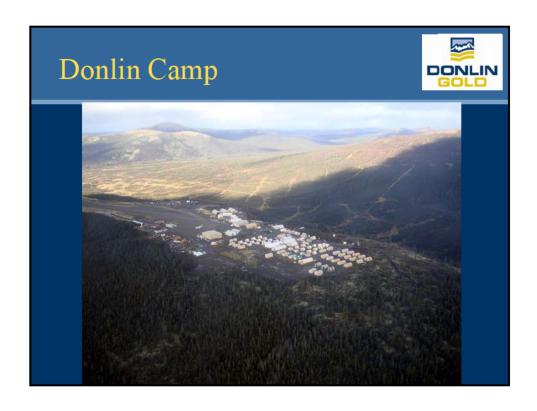


Agenda



- Introduction
- Project Summary
- Geology & Mining
- Mill/Process
- Water Management
- Logistics & Infrastructure
- Reclamation & Closure
- Community Engagement





Donlin Gold



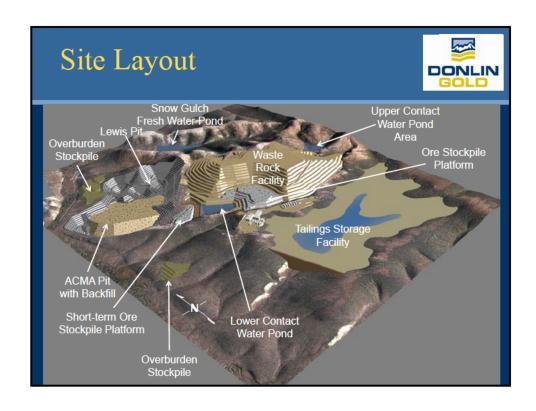
- Donlin Gold LLC is 50/50 partnership
 - Barrick Gold US
 - NovaGold Resources
- Operates under land agreements w/ ANCSA landowners
 - Calista Corporation (Mining Lease)
 - The Kuskokwim Corporation (Surface Use)
- Project office located in Anchorage
 - − ~40 employees



Project Summary



- Reserve: > 33 million ounces Au (~500M tons ore)
- Mine Life: ~27 years
- <u>Production</u>: >1 million ounces annually
- Operation: Open-pit, conventional truck & shovel
- <u>Milling</u>: 59k st/d, sulfide flotation, Pressure Oxidation, Carbonin-Leach (CIL) recovery
- Strip ratio: $\sim 5.5:1 = \sim 3B$ tons waste rock
- <u>Tailings</u>: Fully lined storage facility
- <u>Power</u>: ~150MW, supplied by 313 mile, 14" buried natural gas pipeline
- <u>Logistics</u>: All consumables supplied by Kuskokwim River transportation system w/ port near Jungjuk Creek



Disturbance Footprint



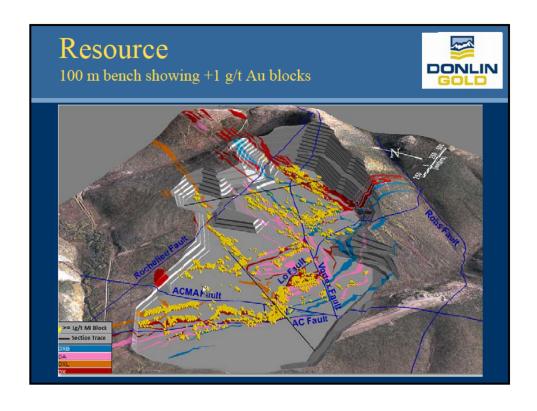
- Facilities Study Area (FSA)
 - Footprint $\sim 10,000$ acres
 - Wetland ~5,300 acres
- Pipeline Study Area (PSA)
 - Footprint \sim 6,300 acres
 - Wetland $\sim 1,600$ acres
- Aquatic Habitat
 - Nearly 100% direct impact to American and Anaconda creeks
 - Reduction in Crooked Creek streamflow ~2-25%
 - Total temporary/permanent linear stream impacts ${\sim}75$ miles

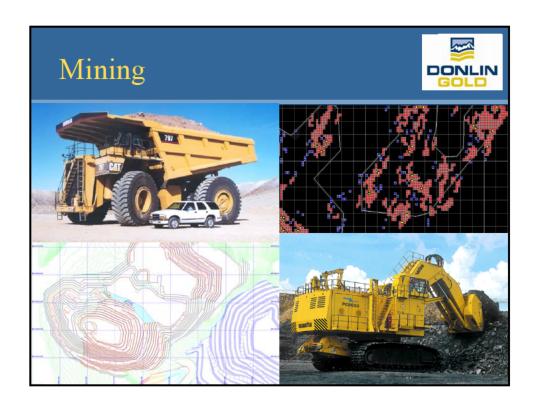
Economic Impacts

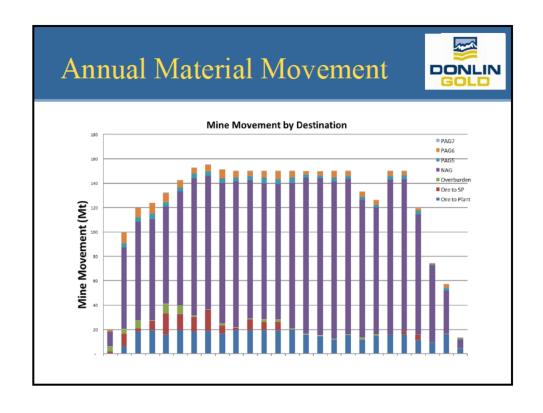


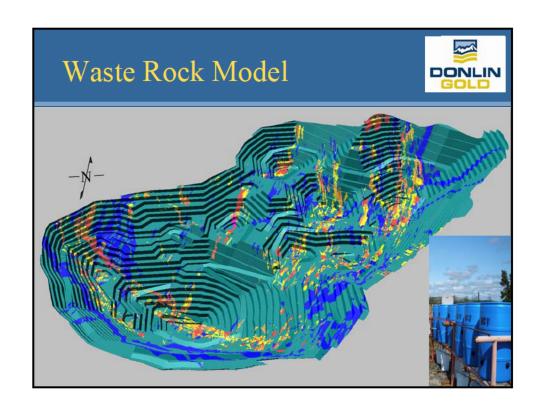
- Construction Phase (3 years)
 - Major investment in regional infrastructure
 - Workforce: ~3,000
 - − Payroll: > \$1 billion (~\$375 million/year)
- Operations (>27 years)
 - Workforce: ~ 900
 - Payroll: ~\$100 million/year
 - Indirect and induced payroll: ~\$60 million/year
 - Royalties to Calista, and distributed statewide through 7(i) provision of ANCSA
 - Mining license and corporate income taxes to State

Geology LEWIS AREA PIT Outline









Waste Rock Classification

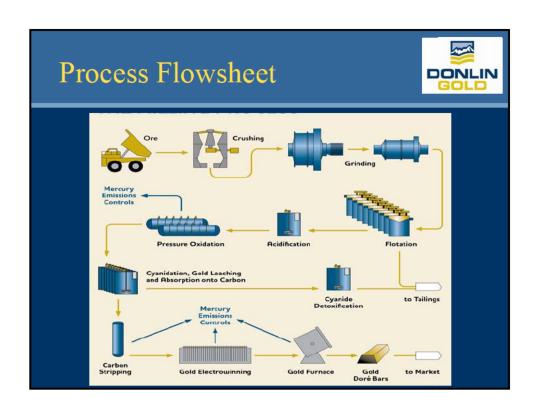


WRMC	Mt	%	Disposal
NAG	2,519	93	Waste Rock Facility
PAG 5	79	3	Blended in WRF
PAG 6	123	4	Isolated cells in WRF / ACMA backfill
PAG 7	2	0.1	Low-grade ore stockpile / ACMA backfill
Total	2,723	0.1	715118 T DOCKHIII

Process Mineralogy



- Au in Donlin ore is all sub-microscopic
 - Disseminated in crystal structure of arsenopyrite and pyrite, hence it is refractory.
 - Not directly leachable ("refractory")
- Arsenopyrite is primary host accounting for ~80% of Au in feed.
- Pyrite, although 3-10 times more abundant than aresenopyrite, carries ~20% of the gold.





Mercury Abatement



- Major focus during process design
- Expertise developed at Barrick operations in Nevada
- Mercury volatized when heated
 - Autoclave, Carbon Regeneration Kiln, Smelter, Electro-winning Circuit, Retort
- Control design elements
 - Gas quenching
 - Particulate removal
 - Refrigeration
 - Carbon beds

Cyanidation Control



- Process Design and Handling Systems conform to the International Cyanide Management Code (ICMC).
 - Voluntary initiative for cyanide management.
 - Minimize personnel & environmental exposure through design and application of physical & automated control
- Includes:
 - HCN Monitoring (gaseous)
 - Covered leach tanks, operating under partial vacuum (surface) reporting to dedicated gas scrubbing
 - Tan theta design principle for slurry spillage
 - Minimum of two physical spillage control systems

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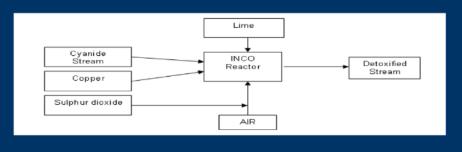
- Specially designed Iso-tainers
- Detoxification of residual cyanide in tailings.

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Cyanide Detoxification



- INCO Air/SO2 cyanide detoxification pretreatment of the CIL tailings is completed before going to tailings storage facility
- Well known, well tested process



Water Management

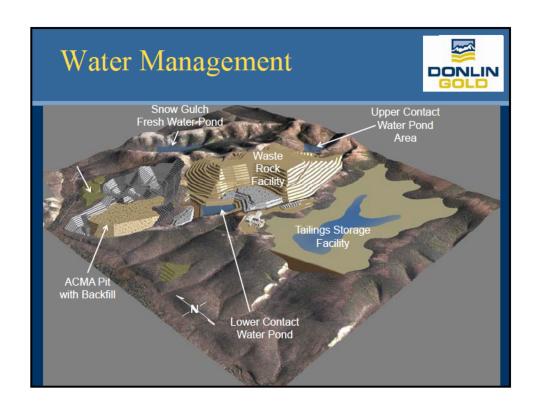


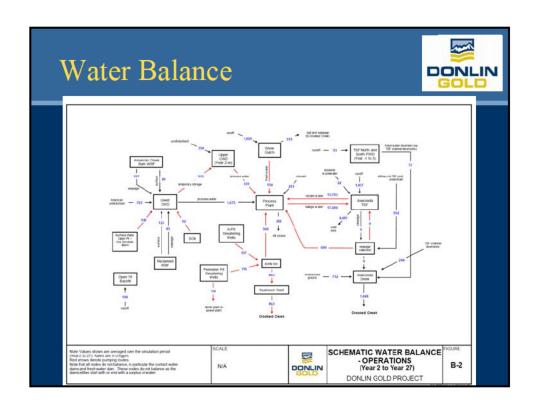
- Objectives
 - No discharge of process water during operations
 - Ensure sufficient supply of water during operation
 - Minimize amount of water that has to be treated
- Components
 - Precipitation ~20 in/year
 - American and Anaconda watersheds ~ 7 mi² each
 - All contact water captured, used, or stored onsite

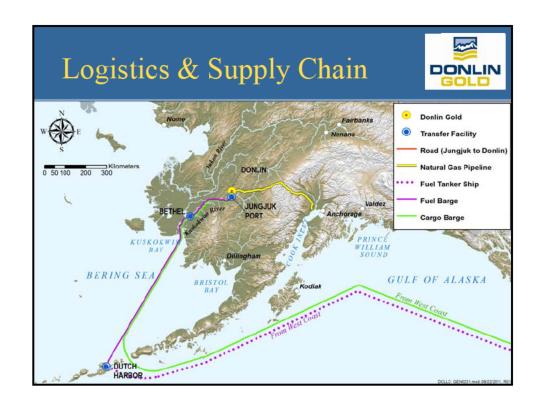
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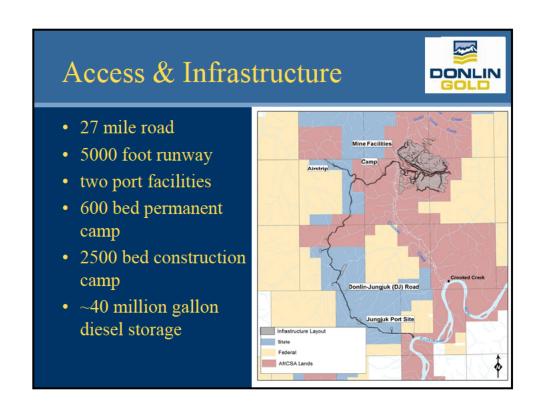
Discharge of treated dewatering water

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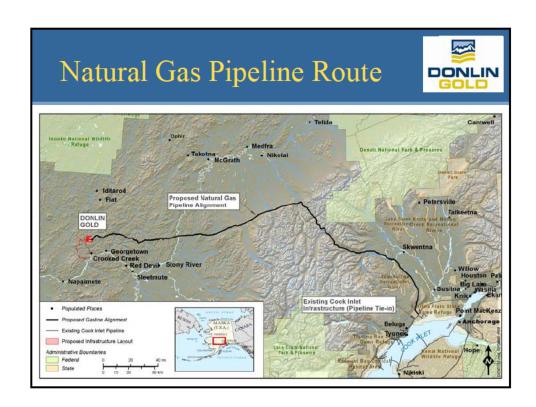


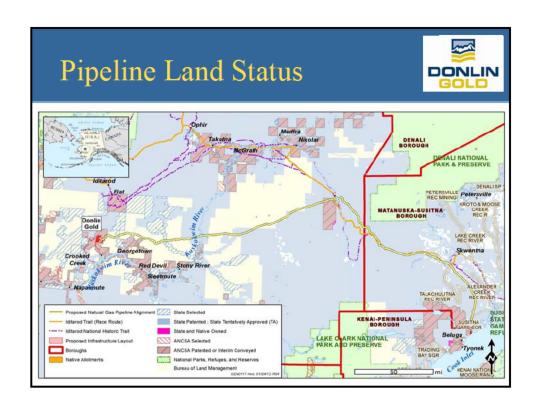


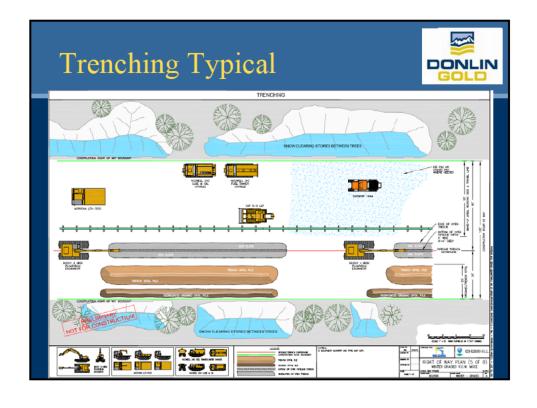
Gas Pipeline

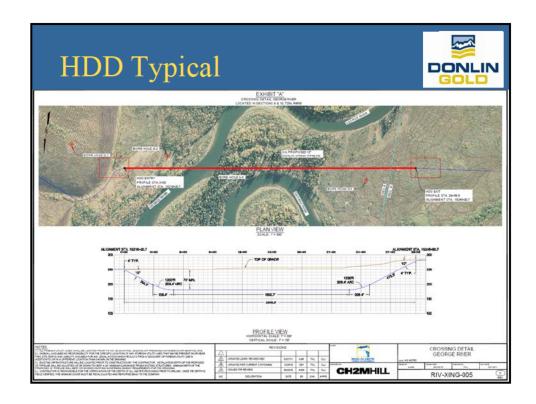


- Description
 - 313 mile, buried, 14" steel pipeline
 - − ~70 mmscfd capacity
 - 1,480 psig max allowable operating pressure
- · Land Status
 - ~56% State, ~34% BLM, ~10% ANCSA/Private
- · Facilities
 - Single compressor station
 - Pig-launching/receiving stations (start, middle, end)
 - − ~19 block valves
 - Cathodic protection, leak protection, and SCADA system
- Construction
 - 2 construction spreads, each with 3-4 sections
 - Construction period over 2 winters and 2-3 summers
 - Season for each section based on terrain and geotechnical conditions





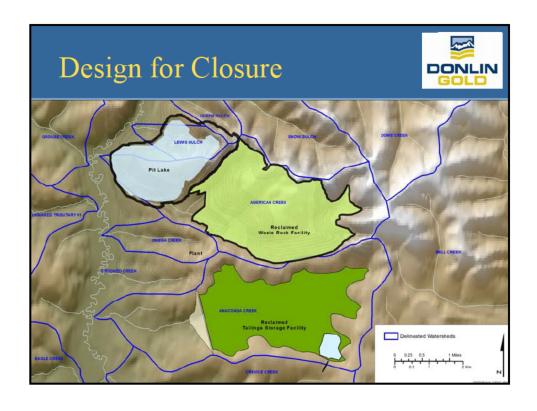




Reclamation & Closure



- "Design for Closure"
 - Minimize footprint
 - Maximize concurrent reclamation
 - Manage waste rock and tailings facilities for long-term stability
 - Minimize accumulation of water in facilities
- Closure Features
 - Dry closure of tailings facility
 - Removal of all process facilities
 - All contact water reports to pit lake
 - Plan for long-term treatment





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Community Engagement



- Stakeholder Dialogue
 - Village meetings, project site and mine tours
- Workforce Development
 - Jobs, training, and capacity building
- Communications
 - Monthly newsletter, website, social media
- Community Investment
 - cultural preservation, environmental protection, community wellness, education
 - community capacity building and sustainability

